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10/528,508	10/11/2005	Teruya Maeda	450100-04781	4361

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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,508	MAEDA, TERUYA	
	Examiner	Art Unit	
	RuiMeng Hu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 10/08/2010.

Response to Arguments

1. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 1-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokogawa et al. (JP 2000-232458)** in view of **Sugiura (US Pub. 2001/0015967), Yokogawa et al. (JP 2000-232456)** and **Tong et al. (US Pub 2001/0034236).**

Consider **claim 1**, Yokogawa et al. clearly disclose a system for making wireless communication processing between a wireless base station (the key station) and an arbitrary wireless terminal apparatus (child offices 2a-2c), said system comprising: a wireless communication apparatus for a base station (the key station), the apparatus including a plurality of antenna bodies each having a directional pattern in a predetermined direction (paragraph 0030, each antenna unit has directivity of 30 degrees, which associated with the field (service area)); and a wireless terminal apparatus, to become a communication target (child offices 2a-2c), that is operative to perform making wireless communication with said wireless communication apparatus (the key station) for the base station (paragraph 0004, the key station holding many child offices 2a-2c), wherein said wireless communication apparatus for the base station is operative to perform: (paragraphs 19 and 22) transmission of a reference signal (inquiry signal) to the wireless terminal communication apparatus (user module) alternately (switching or changing to the next adjacent sector unit antenna) from each of the plurality of antenna bodies (two or more directive antennas), wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged (switching to the next adjacent sector unit antenna is enlarging search range) by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraphs 19 and 22); transmission processing of an acknowledge signal to

said wireless terminal apparatus within a communication area of each of the directional patterns of said antenna bodies regularly or irregularly (paragraph 26, figures 6 and 8, information signal B1 Bch); identification processing of the communication-targeted wireless terminal apparatus (child offices 2a-2c) located within a communication area by receiving a connection request signal sent from said wireless terminal apparatus based on said acknowledge signal (paragraph 8, figure 8(d), connection request signal R1-R12); storage processing of a correspondence relationship between said communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 9, drawing 9, stored table stores each child office's ID and its assigned antenna); and at the time of making wireless communication, selection processing of the antenna body which corresponds to the pertinent wireless terminal apparatus based on the storage processing of the correspondence relationship stored beforehand (paragraph 0012, data communication to the child offices 2a-2c using the already managed (stored) antenna (sector unit) about the child offices 2a-2c); wherein the wireless communication apparatus determines an optimal one of the antenna bodies for transmission prior to sending video data to the wireless terminal (paragraphs 7-9).

However, Yokogawa et al. fail to clearly disclose wherein a wireless communication apparatus for the base station performs scan processing of inputs of antenna sector units and waits for receiving data, except for the time of making the wireless transmission.

Yokogawa et al. clearly disclose a conventional embodiment (see paragraphs 8, 9 and 12) wherein a wireless communication apparatus for the base station performs

scan processing of inputs of antenna sector units and waits for receiving data (*paragraphs 8 and 9, the key station establishes communication links between the child offices 2a-2c, specifically establishing the specific antenna sector unit of the key station for the communication link with each child offices 2a-2c and the establishment is updated timely*), except for the time of making the wireless transmission (*paragraph 12, after the communication links are established (to the child offices 2a-2c which the key station has already managed), the data communication are performed between the key station and the child offices using the already managed antenna sector units about the child offices (last sentence of paragraph 12), accordingly the scan processing of the key station is not performed during data communication (the time of making the wireless transmission)*).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. into the art of Yokogawa et al. as to include the conventional embodiment as disclosed by Yokogawa et al. as a further embodiment.

However Yokogawa et al. fail to disclose the base station performs reception processing of at least a television signal.

This teaching is well known in the art. Sugiura discloses a wireless system comprising a base station (paragraph 4, see figure, access point 19) receives TV broadcast signals and transmits the TV broadcast signals to the wireless terminals 18a, 18b.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Sugiura into the art of Yokogawa et al. as to receive TV broadcasting as an additional function.

However Yokogawa et al. fail to clearly mention the detail of establishing directive antenna assignment, as prior to determination of whether video data is to be transmitted, transmission f a reference signal from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus.

In the same field of endeavor, Yokogawa et al. (JP 2000-232456) disclose in the wireless data communication system (wireless local area network), assigning a directive antenna sector to a child station which is located within the coverage of the directive antenna sector, prior to determination of whether video data is to be transmitted, transmission f a reference signal (paragraph 11, a reporting signal) from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus, wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraph 11, While transmitting a reporting signal for a key station changing two or more antennas which had directivity one by one,

and checking existence of a child station one by one, When a child station which received a reporting signal transmits a reply signal to a key station and a key station transmits an enabling signal which directs data communications to the child station concerned using an antenna which received a reply signal from a child station, A key station faces carrying out radio of a data signal and the reception confirmation signal between the child stations concerned using the antenna concerned, and data communications between a key station and a child station are performed).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. (JP 2000-232456) into the art of Yokogawa et al. as to establish directive antenna assignment prior to data communications, and maintain antenna assignment updated for efficient data communications.

However Yokogawa et al. fail to disclose determines an optimal one of the antenna bodies for transmission based on signal strength of the connection request signal received by the antenna bodies.

The teaching of selecting a sector antenna with highest received signal strength is well known in the art. Tong et al. disclose in paragraph 40 and figure 1, a wireless local area network comprising a base transceiver station (BTS), wherein the BTS makes the determination, based on the received signals from mobile/user terminals, what the optimal beam would be for servicing the user terminal. Optimality may be based on largest received signal strength.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Tong et al. into the art of Yokogawa et al. as to select the optimal antenna body with highest received signal strength for better communication quality.

Consider **claim 2, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus for the base station at least comprises: a plurality of antenna bodies each having a directional pattern in a predetermined direction (paragraph 0030, each antenna unit has directivity of 30 degrees, which associated with the field (service area)); and a controller for allowing identifying the communication-targeted wireless terminal apparatus (child offices 2a-2c) located within the communication area (the subordinate or field of service area) created by each of the directional patterns of said antenna bodies (paragraph 0030), and recognizing the correspondence relationship between the pertinent communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9), wherein said controller performs: at the time of making wireless communication, selection processing of the antenna body which corresponds to the pertinent wireless terminal apparatus (child offices 2a-2c), and communication processing with the wireless terminal apparatus (child offices 2a-2c) located within the communication area created by the pertinent directional pattern, using said selected antenna body (drawing 9, paragraph 0012, data communication to the child offices 2a-2c using the already managed (stored) antenna (sector unit) about the child offices 2a-2c).

Consider **claim 3, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said communication-targeted wireless terminal apparatus (child offices 2a-2c) is located within the communication area created by the predetermined directional pattern of said wireless communication apparatus (the key station) for the base station (paragraph 0008), or said communication-targeted wireless terminal apparatus (child offices 2a-2c) moves between the communication areas of these pertinent directional patterns (paragraph 0019).

Consider **claim 4, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus for the base station comprises storing means (stored table) for storing antenna selection information indicative of the correspondence relationship between said communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9).

Consider **claim 5, as applied to claim 4 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus performs a memory control over said storing means to update said antenna selection information (paragraph 0053).

Consider **claim 6, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus regularly or irregularly transmits data (confirmation-of-receipt signal) for confirming that said communication-targeted wireless terminal apparatus (child offices 2a-2c) is present in the communication area to the wireless terminal apparatus (paragraph 0022).

Consider **claim 7, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus for the base station comprises at least two antenna bodies having different directional patterns from each other (paragraph 0030), and wherein said wireless communication apparatus (key station) transmits a reference signal to the communication-targeted wireless terminal apparatus (child offices 2a-2c) within the communication area created by the pertinent directional pattern from both of said antenna bodies alternately (paragraphs 0022, 0023, consider a child office travels between communication areas created by the pertinent directional pattern, and the stored table (drawing 9) gets reset, different antenna units would be used).

Consider **claim 8, as applied to claim 1 above**, Yokogawa et al. as modified clearly disclose wherein said wireless communication apparatus (key station) for the base station receives the data using the antenna body that receives the strongest radio wave from said communication-targeted wireless terminal apparatus (paragraph 12, using the already managed antenna unit (desired antenna unit) about the child offices 2a-2c).

Consider **claim 9**, Yokogawa et al. clearly disclose a wireless communication apparatus (the key station) for arbitrarily making wireless communication with a wireless terminal apparatus (child offices 2a-2c), to become a communication target, said apparatus comprising (paragraph 0007): a plurality of antenna bodies each having a directional pattern in a predetermined direction (paragraph 0030, each antenna unit has directivity of 30 degrees, which associated with the field (service area)); and a controller

(paragraph 0008, the key station) for allowing identifying a communication-targeted wireless terminal apparatus (child offices 2a-2c) located within a communication area created by each of the directional patterns of said antenna bodies, and recognizing a correspondence relationship between the pertinent communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9), wherein said controller is operative to perform: (paragraphs 19 and 22) transmission of a reference signal (inquiry signal) to the wireless terminal communication apparatus (user module) alternately (switching or changing to the next adjacent sector unit antenna) from each of the plurality of antenna bodies (two or more directive antennas), wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged (switching to the next adjacent sector unit antenna is enlarging search range) by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraphs 19 and 22); transmission processing of an acknowledge signal to said wireless terminal apparatus within a communication area of each of the directional patterns of said antenna bodies regularly or irregularly (paragraph 26, figures 6 and 8, information signal B1 Bch); identification processing of the communication-targeted wireless terminal apparatus (child offices 2a-2c) located within a communication area by receiving a connection request signal sent from said wireless terminal apparatus based on said acknowledge signal (paragraph 8, figure 8(d), connection request signal R1-R12); at the time of making wireless communication, selection processing of the antenna body that corresponds to the pertinent wireless terminal apparatus based on the identification processing performed beforehand (each

of child offices 2a-2c associating with a directional antenna according to the stored table (drawing 9)); and communication processing with the wireless terminal apparatus located within the pertinent directivity using said selected antenna body (paragraph 0012, data communication to the child offices 2a-2c using the already managed (stored) antenna (sector unit) about the child offices 2a-2c); wherein the wireless communication apparatus determines an optimal one of the antenna bodies for transmission prior to sending video data to the wireless terminal (paragraphs 7-9).

However, Yokogawa et al. fail to clearly disclose wherein a wireless communication apparatus for the base station performs scan processing of inputs of antenna sector units and wait for receiving data, except for the time of making the wireless transmission.

Yokogawa et al. clearly disclose a conventional embodiment (see paragraphs 8, 9 and 12) wherein the controller of the base station performs scan processing of inputs of antenna sector units and waits for receiving data (*paragraphs 8 and 9, the key station establishes communication links between the child offices 2a-2c, specifically establishing the specific antenna sector unit of the key station for the communication link with each child offices 2a-2c and the establishment is updated timely*), except for the time of making the wireless transmission (*paragraph 12, after the communication links are established (to the child offices 2a-2c which the key station has already managed), the data communication are performed between the key station and the child offices using the already managed antenna sector units about the child offices (last*

sentence of paragraph 12), accordingly the scan processing of the key station is not performed during data communication (the time of making the wireless transmission)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. into the art of Yokogawa et al. as to include the conventional embodiment as disclosed by Yokogawa et al. as a further embodiment.

However Yokogawa et al. fail to disclose the base station performs reception processing of at least a television signal.

This teaching is well known in the art. Sugiura discloses a wireless system comprising a base station (paragraph 4, see figure, access point 19) receives TV broadcast signals and transmits the TV broadcast signals to the wireless terminals 18a, 18b.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Sugiura into the art of Yokogawa et al. as to receive TV broadcasting as an additional function.

However Yokogawa et al. fail to clearly mention the detail of establishing directive antenna assignment, as prior to determination of whether video data is to be transmitted, transmission f a reference signal from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus.

In the same field of endeavor, Yokogawa et al. (JP 2000-232456) disclose in the wireless data communication system (wireless local area network), assigning a directive antenna sector to a child station which is located within the coverage of the directive antenna sector, prior to determination of whether video data is to be transmitted, transmission f a reference signal (paragraph 11, a reporting signal) from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus, wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraph 11, While transmitting a reporting signal for a key station changing two or more antennas which had directivity one by one, and checking existence of a child station one by one, When a child station which received a reporting signal transmits a reply signal to a key station and a key station transmits an enabling signal which directs data communications to the child station concerned using an antenna which received a reply signal from a child station, A key station faces carrying out radio of a data signal and the reception confirmation signal between the child stations concerned using the antenna concerned, and data communications between a key station and a child station are performed).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. (JP 2000-232456) into the art of Yokogawa et al. as to establish

directive antenna assignment prior to data communications, and maintain antenna assignment updated for efficient data communications.

However Yokogawa et al. fail to disclose determines an optimal one of the antenna bodies for transmission based on signal strength of the connection request signal received by the antenna bodies.

The teaching of selecting a sector antenna with highest received signal strength is well known in the art. Tong et al. disclose in paragraph 40 and figure 1, a wireless local area network comprising a base transceiver station (BTS), wherein the BTS makes the determination, based on the received signals from mobile/user terminals, what the optimal beam would be for servicing the user terminal. Optimality may be based on largest received signal strength.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Tong et al. into the art of Yokogawa et al. as to select the optimal antenna body with highest received signal strength for better communication quality.

Consider **claim 10, as applied to claim 9 above**, Yokogawa et al. as modified clearly disclose storing means for storing antenna selection information indicative of the correspondence relationship between said communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9).

Consider **claim 11, as applied to claim 10 above**, Yokogawa et al. as modified clearly disclose wherein said controller performs a memory control over said storing means to update said antenna selection information (paragraph 0053).

Consider **claim 12, as applied to claim 9 above**, Yokogawa et al. as modified clearly disclose wherein said controller regularly or irregularly transmits data for confirming that said communication targeted wireless terminal apparatus is present in the communication area to the wireless terminal apparatus (paragraph 0022).

Consider **claim 13, as applied to claim 9 above**, Yokogawa et al. as modified clearly disclose comprising said antenna bodies of at least two having different directional patterns from each other (paragraph 0030), wherein the controller allows transmitting a reference signal to the communication-targeted wireless terminal apparatus (child offices 2a-2c) within the pertinent directivity from both of said antenna bodies alternately (paragraphs 0022, 0023, consider a child office travels between communication areas created by the pertinent directional pattern, and the stored table (drawing 9) gets reset, different antenna units would be used).

Consider **claim 14, as applied to claim 9 above**, Yokogawa et al. as modified clearly disclose wherein the controller (the key station) receives the data using the antenna body that receives the strongest radio wave (the most desired antenna) from said communication-targeted wireless terminal apparatus (paragraph 12, using the already managed antenna unit (desired antenna unit) about the child offices 2a-2c).

Consider **claim 15,** Yokogawa et al. clearly disclose a method for arbitrarily making wireless communication with a wireless terminal apparatus (child offices 2a-2c),

to become a communication-target, said method comprising the steps of: providing a plurality of antenna bodies each having a directional pattern in a predetermined direction to a wireless communication apparatus (the key station) for a base station (paragraph 0030, each antenna unit has directivity of 30 degrees, which associated with the field (service area)), and preparing the communication-targeted wireless terminal apparatus (child offices 2a-2c) which is capable of wireless communication within a communication area (field of service area or subordinate) created by the arbitrary directional pattern; in said wireless communication apparatus (the key station) for the base station, (paragraphs 19 and 22) transmission of a reference signal (inquiry signal) to the wireless terminal communication apparatus (user module) alternately (switching or changing to the next adjacent sector unit antenna) from each of the plurality of antenna bodies (two or more directive antennas), wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged (switching to the next adjacent sector unit antenna is enlarging search range) by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraphs 19 and 22); regularly or irregularly identifying the communication-targeted wireless terminal apparatus located within a communication area created by each of the directional patterns of said antenna bodies (paragraph 0008); storing a correspondence relationship between said identified communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9); at the time of making wireless communication, selecting the antenna body which corresponds to the pertinent wireless terminal apparatus based on the

correspondence relationship stored beforehand (according to the stored table drawing 9, each of child offices 2a-2c associating with a desired antenna); and performing communication processing with the wireless terminal apparatus located within the pertinent directivity using said selected antenna body (paragraph 0012, data communication to the child offices 2a-2c using the already managed (stored) antenna (sector unit) about the child offices 2a-2c); transmission processing of an acknowledge signal to said wireless terminal apparatus within a communication area of each of the directional patterns of said antenna bodies regularly or irregularly (paragraph 26, figures 6 and 8, information signal B1 Bch); identification processing of the communication-targeted wireless terminal apparatus (child offices 2a-2c) located within the communication area by receiving a connection request signal sent from said wireless terminal apparatus based on said acknowledge signal (paragraph 8, figure 8(d), connection request signal R1-R12); wherein the wireless communication apparatus determines an optimal one of the antenna bodies for transmission prior to sending video data to the wireless terminal (paragraphs 7-9).

However, Yokogawa et al. fail to clearly disclose wherein a wireless communication apparatus for the base station performs scan processing of inputs of antenna sector units and waits for receiving data, except for the time of making the wireless transmission.

Yokogawa et al. clearly disclose a conventional embodiment (see paragraphs 8, 9 and 12) wherein the base station performs scan processing of inputs of antenna sector units and waits for receiving data (*paragraphs 8 and 9, the key station*

establishes communication links between the child offices 2a-2c, specifically establishing the specific antenna sector unit of the key station for the communication link with each child offices 2a-2c and the establishment is updated timely), except for the time of making the wireless transmission (*paragraph 12, after the communication links are established (to the child offices 2a-2c which the key station has already managed), the data communication are performed between the key station and the child offices using the already managed antenna sector units about the child offices (last sentence of paragraph 12), accordingly the scan processing of the key station is <u>not</u> performed during data communication (the time of making the wireless transmission)*).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. into the art of Yokogawa et al. as to include the conventional embodiment as disclosed by Yokogawa et al. as a further embodiment.

However Yokogawa et al. fail to disclose the base station performs reception processing of at least a television signal.

This teaching is well known in the art. Sugiura discloses a wireless system comprising a base station (paragraph 4, see figure, access point 19) receives TV broadcast signals and transmits the TV broadcast signals to the wireless terminals 18a, 18b.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by

Sugiura into the art of Yokogawa et al. as to receive TV broadcasting as an additional function.

However Yokogawa et al. fail to clearly mention the detail of establishing directive antenna assignment, as prior to determination of whether video data is to be transmitted, transmission f a reference signal from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus.

In the same field of endeavor, Yokogawa et al. (JP 2000-232456) disclose in the wireless data communication system (wireless local area network), assigning a directive antenna sector to a child station which is located within the coverage of the directive antenna sector, prior to determination of whether video data is to be transmitted, transmission f a reference signal (paragraph 11, a reporting signal) from a first antenna body to the wireless terminal communication apparatus, subsequently and prior to determination of whether video data is to be transmitted, transmission of a reference signal from a second antenna body to the wireless terminal communication terminal apparatus, wherein a range of detection of the reference signal by the wireless terminal apparatus is enlarged by the transmission of the reference signal alternately through each of the plurality of antenna bodies (paragraph 11, While transmitting a reporting signal for a key station changing two or more antennas which had directivity one by one, and checking existence of a child station one by one, When a child station which received a reporting signal transmits a reply signal to a key station and a key station

transmits an enabling signal which directs data communications to the child station concerned using an antenna which received a reply signal from a child station, A key station faces carrying out radio of a data signal and the reception confirmation signal between the child stations concerned using the antenna concerned, and data communications between a key station and a child station are performed).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Yokogawa et al. (JP 2000-232456) into the art of Yokogawa et al. as to establish directive antenna assignment prior to data communications, and maintain antenna assignment updated for efficient data communications.

However Yokogawa et al. fail to disclose determines an optimal one of the antenna bodies for transmission based on signal strength of the connection request signal received by the antenna bodies.

The teaching of selecting a sector antenna with highest received signal strength is well known in the art. Tong et al. disclose in paragraph 40 and figure 1, a wireless local area network comprising a base transceiver station (BTS), wherein the BTS makes the determination, based on the received signals from mobile/user terminals, what the optimal beam would be for servicing the user terminal. Optimality may be based on largest received signal strength.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Tong

et al. into the art of Yokogawa et al. as to select the optimal antenna body with highest received signal strength for better communication quality.

Consider **claim 16, as applied to claim 15 above**, Yokogawa et al. as modified clearly disclose the steps of locating (paragraphs 0007, 0008) said communication-targeted wireless terminal apparatus (child offices 2a-2c) within the communication area (field of service area or subordinate) created by the predetermined directional pattern of said wireless communication apparatus for a base station (paragraph 0030), or allowing said communication-targeted wireless terminal apparatus (child offices 2a-2c) to move between the communication areas (subordinates) created by these directional patterns (paragraph 0019).

Consider **claim 17, as applied to claim 15 above**, Yokogawa et al. as modified clearly disclose the step of creating antenna selection information indicative of the correspondence relationship between said communication-targeted wireless terminal apparatus (child offices 2a-2c) and each of said antenna bodies (paragraph 0009, drawing 9).

Consider **claim 18, as applied to claim 17 above**, Yokogawa et al. as modified clearly disclose the step of updating said antenna selection information (paragraph 0053).

Consider **claim 19, as applied to claim 15 above**, Yokogawa et al. as modified clearly disclose the step of regularly or irregularly transmitting data for confirming that said communication-targeted wireless terminal apparatus is present in the communication area to the wireless terminal apparatus (paragraph 0022).

Consider **claim 20, as applied to claim 15 above**, Yokogawa et al. as modified clearly disclose the steps of: providing said antenna bodies of at least two having different directivities from each other (paragraph 0030); and transmitting a reference signal through both of said antenna bodies to the communication-targeted wireless terminal apparatus (child offices 2a-2c) within the pertinent directivity alternately (paragraphs 0022, 0023, consider a child office travels between communication areas created by the pertinent directional pattern, and the stored table (drawing 9) gets reset, different antenna units would be used).

Consider **claim 21, as applied to claim 15 above**, Yokogawa et al. as modified clearly disclose the steps of: receiving the data using the antenna body that receives the strongest radio wave (most desired antenna) from said communication-targeted wireless terminal apparatus (paragraph 0012, using the already managed antenna unit (desired antenna unit) about the child offices 2a-2c).

Conclusion

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/RuiMeng Hu/
R.H./rh
November 12, 2010

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618